

WHAT IS CLAIMED IS:

1. A synchronization tracking circuit for synchronizing the phase of a desreading code sequence on a receiving side to the phase of a spreading code sequence on a transmitting side, comprising:

a DLL circuit for performing synchronization tracking by DLL (Delay Locked Loop) control; and  
an interference-component estimation unit for estimating an interference component inflicted by

- 10 another path upon a prescribed path of interest among multiple paths;

wherein said DLL circuit executes DLL control for causing the phase of the desreading code sequence on the receiving side to be synchronized with and track the  
15 phase of the spreading code on the transmitting side based upon a signal obtained by eliminating the interference component, which is inflicted from the other path, from a despread signal obtained by desreading a receive signal.

- 20 2. The circuit according to claim 1, wherein said interference-component estimation unit estimates the interference component inflicted by the other path upon a prescribed path of interest based upon a channel estimation value of the other path, an interpath delay-  
25 time difference between the other path and the path of interest, and impulse response of the overall transceiver

3. The circuit according to claim 1, wherein said DLL

circuit includes:

a despreader for despread the receive signal by the desreading code sequence on the receiving side and outputting a despread signal that results;

- 5        an interference-component elimination unit for eliminating the interference component from the despread signal; and

10       a phase control signal generator for generating a signal for controlling the phase of the desreading code sequence on the receiving side based upon the despread signal from which the interference component has been eliminated.

4. The circuit according to claim 1, wherein said DLL circuit eliminates only an interference component from  
15 another path for which a path-to-path delay-time difference between this other path and the path of interest is less than a threshold value.

5. The circuit according to claim 2, further comprising an impulse response generator for storing impulse  
20 response values discretely and outputting an impulse response value that corresponds to an interpath delay-time difference;

wherein said impulse response generator approximates an impulse response value by  $1/2^n$  of a peak  
25 value (where n is a positive integer) and includes:

a storage unit for storing correspondence between time and n discretely; and

an arithmetic unit for obtaining n of a time

that conforms to the interpath delay-time difference and calculating an impulse response value upon shifting the peak value by n bits.

6. The circuit according to claim 3, wherein said  
5 despreader generates first and second despread signals by despreding the receive signal at a timing that leads, by a predetermined phase, timing of the spreading code sequence on the transmitting side and at a timing that lags, by a predetermined phase, timing of said  
10 spreading code sequence;

said interference-component elimination unit eliminates an interference component from each despread signal; and

- said phase control signal generator obtains the  
15 power of each despread signal from which the interference component has been eliminated and generates a signal for controlling the phase of the despreding code sequence on the receiving side based upon a difference between the powers obtained.

- 20 7. The circuit according to claim 3, wherein said despreader generates first and second despread signals by despreding the receive signal at a timing that leads, by a predetermined phase, timing of the spreading code sequence on the transmitting side and at a timing  
25 that lags, by a predetermined phase, timing of said spreading code sequence;

said interference-component elimination unit eliminates an interference component from each despread

signal; and

5       said phase control signal generator rotates, on the  
basis of a channel estimation value of the path of  
interest, phase of a difference signal between despread  
signals from which an interference component has been  
eliminated, and generates a signal for controlling the  
phase of the despread code sequence on the receiving  
side based upon a signal obtained by the phase rotation.

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